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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/753,722	01/04/2001	Shingo Iwasaki	041514-5103	2640

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EXAMINER

BAUMEISTER, BRADLEY W

ART UNIT

PAPER NUMBER

2815

DATE MAILED: 03/22/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/753,722

Applicant(s)

Iwasaki et al.

Examiner

B. William Baumeister

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on Nov 20, 2001

2a) ☐ This action is **FINAL**.

2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1-46 is/are pending in the application.

4a) Of the above, claim(s) 17-29 is/are withdrawn from consideration.

5) ☐ Claim(s) is/are allowed.

6) ☐ Claim(s) is/are rejected.

7) ☐ Claim(s) is/are objected to.

8) ☒ Claims 1-16 and 30-46 are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on is/are objected to by the Examiner.

11) ☐ The proposed drawing correction filed on is: ☒ approved ☐ disapproved.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) ☐ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. .

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) ☐ Notice of References Cited (PTO-892)

18) ☐ Interview Summary (PTO-413) Paper No(s). .

16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

19) ☐ Notice of Informal Patent Application (PTO-152)

17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). .

20) ☐ Other:

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DETAILED ACTION

Election/Restriction

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-14 and 30-43, drawn to an electron emission device, classified in class 257, subclass 10.
 - IA. The embodiment of the Group I device as depicted in FIG 1, wherein the island recess includes formed thereon a continuous carbon film formed on a discontinuous metal film;
 - IB. The embodiment of the Group I device as depicted in FIG 10, wherein the island recess includes formed thereon a discontinuous carbon film formed on a discontinuous metal film;
 - IC. Claims 6 and 35, drawn to the embodiment of the Group I device as depicted in FIG 11, wherein the island recess includes formed thereon carbon distributed within a continuous metal film;
 - ID. The embodiment of the Group I device as depicted in FIG 12, wherein the island recess includes formed thereon a discontinuous metal film formed on a discontinuous carbon film;
 - IE. The embodiment of the Group I device as depicted in FIG 13, wherein the island recess is formed on a continuous carbon film and a discontinuous metal film is formed on the recess;

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- IF. The embodiment of the Group I device as depicted in FIG 14, wherein the island recess is formed on a discontinuous carbon film and a discontinuous metal film is formed on the recess;
 - II. Claims 15, 16, 44 and 45, drawn to an electron emission device and further including additional structures employed to form the recess, classified in class 257, subclass 10.
 - IIA. Claims 15 and 44, drawn to the electron emission device of Group I and further employing fine particles for producing the recess, as depicted, e.g., in FIGs 15-18;
 - IIB. Claims 16 and 45, drawn to the electron emission device of Group I and further employing reverse-tapered blocks for producing the recess, as depicted, e.g., in FIGs 19-24; and
 - IIC. The electron emission device of Group I and further employing a masking wall to produce the recess as depicted, e.g., in FIGs 28 and 29.
 - III. Claim 46, drawn to field emission device array, provisionally classified in class 313, subclass 310.
2. The inventions are distinct, each from the other because of the following reasons:
- a. Inventions II and I are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not

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require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because each of the combinations may employ various ordering of the metal and carbon layers and various continuity or discontinuity of these layers. The subcombination has separate utility such as in devices which employ various ones of the three additional structures for forming the device.

b. Inventions III and I are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the combination can be made employing various ones of the distinct species of the subcombination set forth above. The subcombination has separate utility such as (1) in a field emission device wherein the ohmic electrode is provided in the form of a plane for simultaneously addressing an entire row or column of emission devices; or alternatively (2) for making a light emitting source of a pixel valve, an electron-emitting source of an electron microscope, a surface-type electron emitting diode, an LED or an electromagnetic-wave-emitting laser diode (see specification, page 15, first full paragraph).

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c. Inventions II and III are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention II has separate utility such as (1) in a field emission device wherein the ohmic electrode is provided in the form of a plane for simultaneously addressing an entire row or column of emission devices; or alternatively (2) for making a light emitting source of a pixel valve, an electron-emitting source of an electron microscope, a surface-type electron emitting diode, an LED or an electromagnetic-wave-emitting laser diode. See MPEP § 806.05(d).

3. Because these inventions are distinct for the reasons given above, the inventions have acquired a separate status in the art because of their recognized divergent subject matter as shown by their different classification, the search required for any one group is not required for the other groups, and/or separate examination would be required, restriction for examination purposes as indicated is proper.

4. This application also contains claims directed to various ones of the patentably distinct species of the claimed Group I and Group II inventions as defined above.

a. If Applicant elects the Group I invention, Applicant is required under 35 U.S.C. 121 to elect a single disclosed species from species IA-IG for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently:

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- i. Claims 1, 2, 11, 14, 30, 31, 40 and 43 are generic.
- ii. Claims 3-5 and 32-34 are generic to species IA, IB and ID.
- iii. Claims 7 and 36 are generic to species ID-IF.
- iv. Claims 8 and 37 are generic to species IE and IF.
- v. Claims 9, 12, 38 and 41 are generic to species IA, IB, ID and IE.
- vi. Claims 10 and 39 are generic to species IB and ID.
- vii. Claims 13 and 42 are generic to species IA-ID.

b. If Applicant elects the Group II invention, Applicant is required under 35 U.S.C. 121 to elect a single disclosed species from species IIA-IIC for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently no claims are generic.

5. Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

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Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

6. A telephone call was made to Todd Taylor on 3/17/2002 to request an oral election to the above restriction requirement, but did not result in an election being made.

Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

7. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(I).

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INFORMATION ON HOW TO CONTACT THE USPTO

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to the examiner, **B. William Baumeister**, at (703) 306-9165. The examiner can normally be reached Monday through Friday, 8:30 a.m. to 5:00 p.m. If the Examiner is not available, the Examiner's supervisor, Mr. Eddie Lee, can be reached at (703) 308-1690. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

A handwritten signature in black ink, appearing to read 'B. William Baumeister', with a stylized, looping flourish at the end.

B. William Baumeister

Patent Examiner, Art Unit 2815

March 17, 2002